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# PROCEEDINGS OF THE ELEVENTH ANNUAL WORKSHOP ON SEA TURTLE BIOLOGY AND CONSERVATION

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# SEA TURTLE SIGHTINGS AT PASSES ON THE TEXAS GULF COAST

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## INTRODUCTION

In 1989 "sea turtle sighting signs" were placed at the north and south Fish Pass jetties in Mustang Island State Park near Port Aransas, Texas and at the north jetty of the Brazos Santiago Pass on South Padre Island, Texas. The signs consist of descriptions and colored illustrations of the five species of sea turtles that occur in the Gulf of Mexico and explain that sea turtles are often seen near the jetties. Attached to each sign is a box holding sighting cards to be filled out and a box for the deposition of completed cards. The purpose of the signs is to collect information from the public on the frequency, species, and sizes of sea turtles associated with the passes, with a minimum investment of funds, time, and personnel. Public response to the signs was favorable and as a result the program was expanded in 1990 to encompass eight passes on the Louisiana and Texas Gulf coasts.

## MATERIALS AND METHODS

In mid-July 1990, additional signs were placed at Calcasieu Pass near Cameron, Louisiana, and in Texas at Sabine Pass, Galveston jetties, San Luis Pass, Freeport jetties, and Port Aransas jetty. A sign was erected at the Brazos Santiago Pass south jetty in late August 1990. Signs at the west sides of Sabine Pass and Calcasieu Pass were placed at boat ramps near the jetties because of inaccessibility by automobile and because fishermen most frequently utilizing those jetties do so by boat. No signs were placed at the east side of Sabine Pass and the north side of Aransas Pass because of their inaccessibility. Unfortunately, the sign at the east side of Calcasieu Pass was in place only 4 days before being torn down.

All of the passes, except San Luis Pass, are bordered by rock (granite) groin jetties of varying lengths. All provide access to inshore waters from offshore Gulf waters except for the Fish Pass which had gradually filled in over time. With the exception of San Luis Pass and Fish Pass, all are major navigation channels allowing access to ports at Lake Charles, Louisiana, Sabine Pass and Port Arthur, Galveston and Houston, Freeport, Corpus Christi, and Brownsville, Texas.

## RESULTS

As of 31 December 1990, 283 sea turtles had been sighted at the passes as a result of the sea turtle sighting signs. Most of the sightings have been reported from the southern half of the Texas coast. The largest number of sightings were reported from Fish Pass and Brazos Santiago Pass, with 153 and 83 sightings respectively. Signs at these two sights have been in place the greatest length of time. The number of reported sightings decrease northward, with 36 in Port Aransas, 9 in Freeport, 1 in San Luis Pass, 1 in Galveston, and none in Sabine Pass or Calcasieu Pass. Slightly more turtles were seen within the channel than outside the channel at all locations except for the Fish Pass jetties where considerably more turtles were seen on the side of the jetties not bordering the pass (Figure 1). This is noteworthy because Fish Pass is the only location where the channel does not provide access to inshore waters.

Monthly variations in reported sightings (Figure 2) could reflect seasonal utilization of the jetties by the public. Observations by National Marine Fisheries Service (NMFS) personnel who visit the jetties at Brazos Santiago Pass and Port Mansfield on a regular basis, and netting efforts by the National Park Service (NPS) at Port Mansfield, verify that sightings are seasonal, with the majority of turtles being present during the summer and early fall (D. Shaver, NPS, personal communication, June 1990). Observations by NMFS personnel also confirm the size classes reported as being seen by the public. Most turtles seen are of a juvenile to subadult size. Over 76% of the turtles sighted are reported as being less than 60 cm, with approximately 45% being between 40 and 60 cm. Reports by the public include all 5 species of turtles. However, NMFS personnel report sighting green turtles most often. Inexperience of public observers and short surfacing times by the turtles may make identification of species difficult or inaccurate.

Most of the turtles are sighted during midday. Approximately 62% of the turtles are reported as being sighted between 10 AM and 2 PM CDT. This could be due to several factors, including more frequent surfacings by the turtles, longer surface intervals, increased likelihood of the turtles being present or more frequent utilization of the jetties by the public during these time periods.

## DISCUSSION

Caution must be exercised in interpreting results of sightings reported by the public. Times, dates, and locations of the sightings reflect times, dates, and locations in which the passes are utilized most often by the public. However, because it is not feasible to place trained observers at all the locations, compiling public reports of sightings is a cost-effective method of monitoring sea turtle occurrence at the passes on a regular basis.

Many of the passes monitored are major navigation channels maintained by dredging. The entrance channels or jetty channels at Brazos Santiago Pass, Port Aransas, and Freeport are maintained either annually or biennially by Hopper dredges (U.S. Army Corps of Engineers, 1990). If these jettied passes are important developmental habitat for juvenile and subadult sea turtles in south Texas, as suggested by the frequency of sightings, then turtles may potentially be impacted by dredging activities. As suggested by Magnuson et al. (1990), seasonal dredging may be the best method to lessen the impact of dredging on sea turtles. Data collected through the sighting sign program aid in determining the occurrence and distribution of sea turtles in selected navigation channels in Texas. They can contribute to development of measures to mitigate the impacts of dredging on sea turtles.

In the summer of 1991, a study will be undertaken to characterize the habitat and identify potential food items utilized by the turtles at Brazos Santiago pass. The behavior, movements and diving patterns of turtles around the jetties will be monitored through radio and sonic telemetry. This can provide a model of sea turtle behavior at this and similar entrance channels that may be useful in determining why they are attracted to such channels.

## LITERATURE CITED

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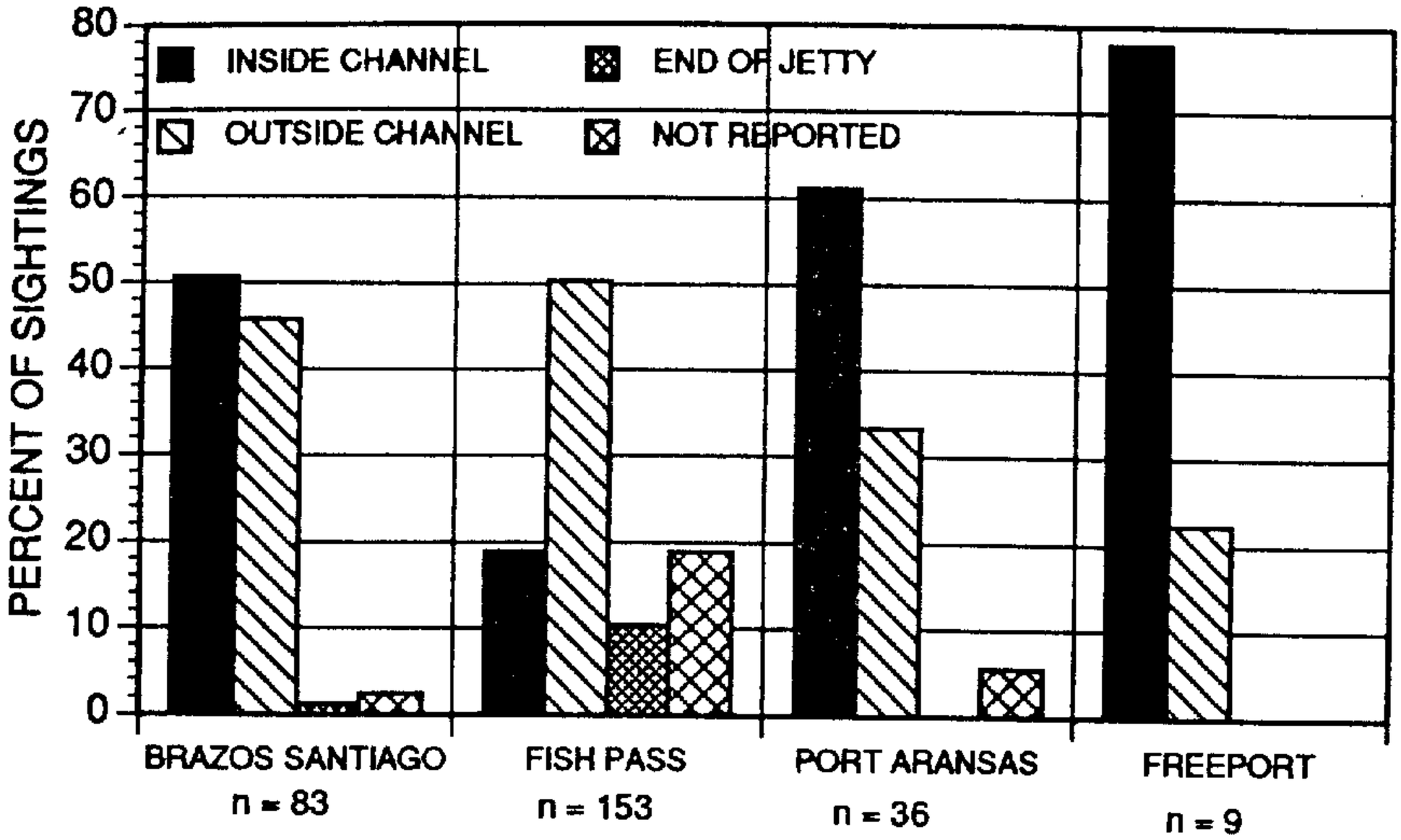


Figure 1. Locations of sea turtle sightings reported by the public at Brazos Santiago Pass, Fish Pass, Port Aransas, and Freeport, Texas.

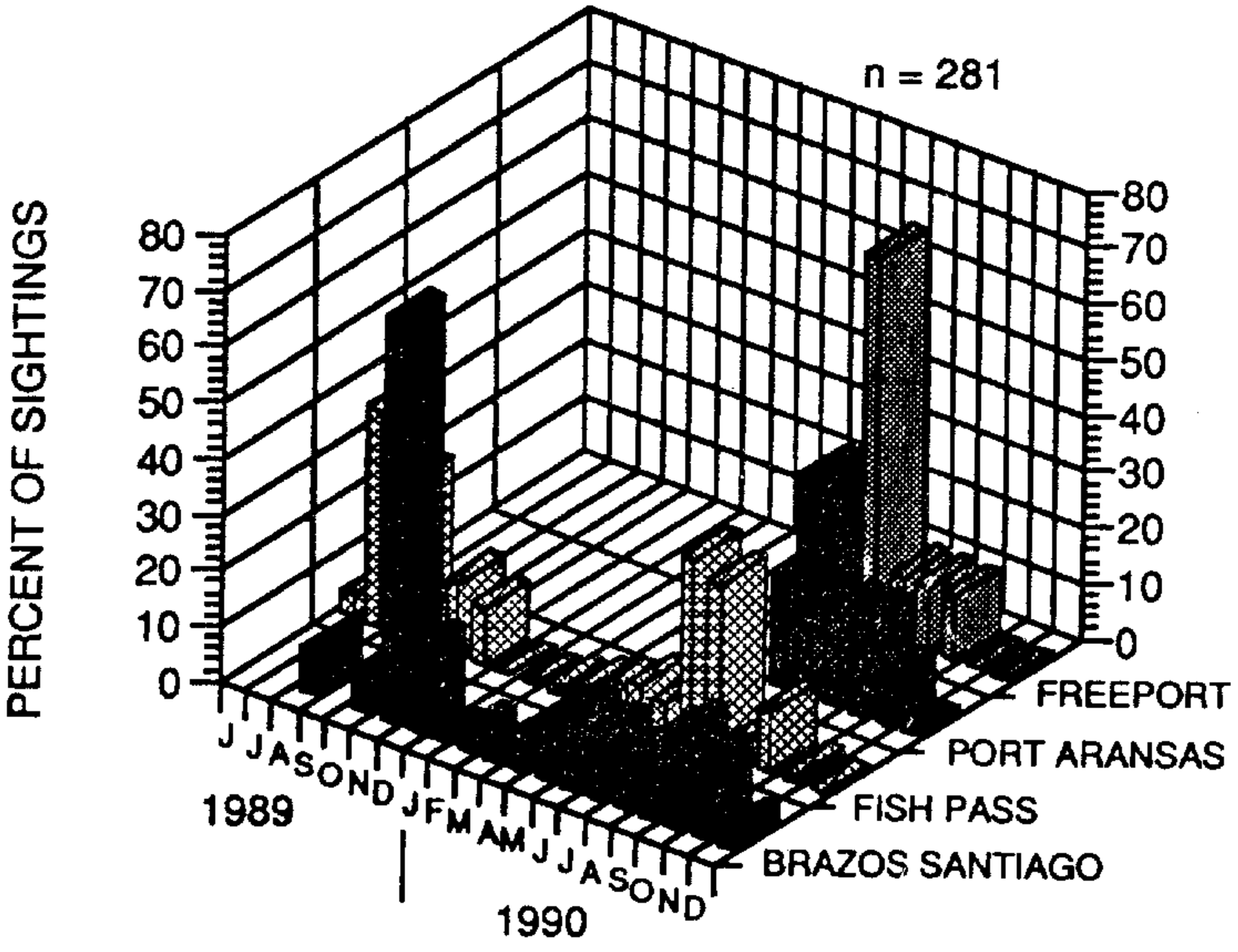


Figure 2. Monthly distribution of sea turtle sightings reported by the public at Brazos Santiago Pass, Fish Pass, Port Aransas, and Freeport, Texas.